Driver Licensing Age and Lifestyles of 16 Year Olds

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Abstract: The relationship of driver licensure rate differences to 16 year old lifestyles was assessed by surveying 15 and 16 year olds in New York, Michigan, and New Jersey. Michigan 16 year olds reported the highest rates of licensure (56 per cent), whereas New York (14 per cent licensed) and New Jersey (2 per cent licensed) had much lower rates. Teenagers in Michigan reported greater decreases in use of bicycles and reliance on parents and relatives for transportation but, for the most part, the differences in 16 year old licensure and mobility were not reflected in lifestyle differences. (*Am J Public Health* 1985; 75:358–360.)

Introduction

Motor vehicle crashes account for nearly half of all deaths among 16–19 year olds.[1] As drivers, teenagers have greatly elevated fatal crash rates, and they are more likely than older drivers to be "at fault" or responsible for the crashes in which they are involved.[2]

Several recent studies have shown that the involvement of teenage drivers in crashes can be reduced by adopting measures that reduce their driving exposure, such as eliminating high school driver education,[3] instituting night driving curfews,[4–6] and raising the minimum licensing age.[7] Raising the minimum licensure age is the most effective way to reduce driving exposure, and thus crash involvement, of teenagers. It also places the most severe restrictions on their transportation alternatives and possibly prevents them from holding jobs and participating in social and other activities to the extent that they desire.

We compare the mobility and lifestyles of 16 year olds in three states (New Jersey, New York, and Michigan) with different 16 year old licensing rates. New Jersey does not license 16 year olds (except for special agricultural licenses); New York has a very low rate of 16 year old licensure, as well as a 9 pm–5 am night driving curfew; and Michigan has a high licensure rate.

Method

Respondents

Respondents for the present analyses were 15 and 16 year olds from 44 different public high schools; 15 schools each were located in Michigan and New York, and 14 were in New Jersey. Schools were selected by proportional random sampling, with slight variations from state to state. The survey was conducted in the spring of 1983.

In Michigan, the entire state was sampled. In New York, New York City and Long Island were excluded from the study because of local laws restricting driving by 16 year olds that differ from the rest of the state. Average participation rates per school were 77 per cent in Michigan, 70 per cent in New Jersey, and 82 per cent in New York, based on schools' stated enrollments. Some students not participating were absent on the survey day, some were missed because of field trips or other special events, and some had transferred or dropped out of school but were still included in school enrollment figures. Numbers of 15 and 16 year olds who provided usable questionnaires were 5,502 in Michigan, 5,716 in New Jersey, and 4,646 in New York.

Questionnaire

The questionnaire contained a standard set of items asked of every student including age, sex, grade, father's and mother's education, and licensure status. Other items were included in five modules that focused on different aspects of teenage driving. The five modules were counterbalanced across 10 forms of the questionnaire so that each form contained a unique combination of two of the five modules. The present paper is based on a lifestyle and mobility module, which was completed by about 40 per cent (about 6,000) of the respondents. This module covered home-based activities, after-school activities, evening activities, and activities directly associated with car use. Also included were questions on work at paying jobs and other ways of getting around such as public transportation.

Analysis

Some of the factors other than licensure rates that could influence mobility and lifestyles are displayed in Table 1. Although several of these factors show no differences, the parental education levels indicate that the students in the three states differ somewhat on socioeconomic status, with New Jersey highest and Michigan lowest.

These differences were controlled in the analyses by estimating state differences in lifestyle separately for students whose parents had completed college and for those whose parents had not. In addition, lifestyle differences between states among 16 year olds were compared to lifestyle differences that already existed between states among 15 year olds (i.e., pre-licensure), thereby controlling for other unknown factors that might affect lifestyle.

The test for the effect of state minimum licensure age was an age (15 year olds versus 16 year olds) by state (New Jersey versus New York versus Michigan) interaction. This interaction was examined for each lifestyle and mobility variable using the FUNCAT procedure of SAS,[8] which provided these tests after grouping on parental education. The age by state by parental education interaction was tested to determine if the licensure effect was different for teenagers from different socioeconomic strata. None of these latter interactions were significant, and the results were combined across education levels.

Results

The rate of licensure for 16 year olds differed widely in the three states studied. In the high schools surveyed, only 2 per cent of the 16 year old New Jersey respondents reported

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TABLE 1—Comparison of 16 Year Olds in the Three States

Characteristic	Michigan	New Jersey	New York
Public transportation within half a mile of residence (%)	42	43	41
Median school grade	80	81	81
Median household size	4.5	4.7	4.5
Mother a college graduate (%)	18	28	24
Father a college graduate (%)	24	35	29

being licensed; an additional 22 per cent had learner permits. In New York, the comparable figures were 14 per cent licensed and 44 per cent with learner permits. In Michigan, 56 per cent were licensed and 17 per cent had learner permits.*

These wide differences in licensure rates were reflected in the driving mileage reported by 16 year olds (licensed or not) in the three states. Of the New Jersey respondents, 83 per cent reported no driving, 13 per cent drove less than 31 miles per week, and only 4 per cent drove 31 miles or more per week. These results were in sharp contrast to those for Michigan where only 32 per cent of 16 year olds did not drive, and 33 per cent drove 31 miles or more per week. Driving mileage for the New York respondents fell in between: 46 per cent did not drive and 21 per cent drove 31 or more miles per week.

Lifestyle Patterns

For daily events, students were asked the number of hours they spent per day in eight different activities** on weekdays and, separately, on weekends during the last month. Only two of 16 age by state interactions were important: paying job on weekdays ($p = 0.002$) and on weekends ($p = 0.004$). In both cases, job holding among 16 year olds in New Jersey increased sharply relative to 15 year olds (from 14 per cent to 27 per cent for weekday jobs; 22 per cent to 37 per cent for weekend jobs). In New York, there were similar but smaller increases, and in Michigan still less change (from 16 to 21 per cent for weekday jobs, from 23 to 25 per cent for weekend jobs).

For 10 activities that typically do not occur on a daily basis,*** students were asked to indicate the number of times they had done them in the past month. State by age interactions were important for family errands ($p = 0.001$) and party going ($p = 0.03$). In Michigan, the per cent of respondents doing family errands two or more times per week doubled from 16 per cent at age 15 to 33 per cent at age 16. In New York, the increase from age 15 to 16 was minimal, and in New Jersey there was no change. In Michigan and New York there was little or no change in party going between the ages of 15 and 16, while in New Jersey 26 per cent of 16 year olds reported going to parties twice or more per week compared to 20 per cent of 15 year olds.

*Learner permits can be obtained at age 16 in Michigan and New York; at age 16 in New Jersey if a driver education course has been completed and at 16-½ if enrolled in a driver education course.

**Doing school homework, watching TV, playing video games and using home computers, hanging around with friends, working at a paying job, doing household chores, reading for pleasure, and talking on the telephone.

***Go to movies, concerts, or sports events; play sports; go to activities such as scouts, band, school clubs; go out on dates; visit friends; drive or ride around with friends (no particular destination); do family errands (such as shopping or giving a ride to brother/sister); go to parties; go shopping; work on a car.

Mobility Pattern

In each state studied, the percentage of students who rode twice or more per week in a car driven by a parent decreased from age 15 to 16, but the decrease was larger in Michigan (82 to 60 per cent) than in New York (79 to 70 per cent) and smallest in New Jersey (79 to 73 per cent). Findings were similar for riding in a car twice or more per week driven by another family member.

In all three states, bicycle riding two or more times per week decreased from ages 15 to 16, but again the decrease was greatest in Michigan (35 to 20 per cent) and smallest in New Jersey (36 to 29 per cent). The percentage who had driven a moped† 20 or more times was higher for 16 year olds (27 per cent) than for 15 year olds (20 per cent) in New Jersey, slightly lower for Michigan (9 versus 11 per cent) and for New York (4 versus 5 per cent).

There were no age by state interactions for public transportation use or riding with other teenagers. Travel twice a week or more in cars driven by teenagers increased about equally from age 15 to age 16 in each state (33 to 44 per cent in Michigan, 28 to 41 per cent in New Jersey, and 23 to 30 per cent in New York).

Discussion

Consistent with the increased mobility provided by licensure, higher rates of 16 year old licensure were associated with doing more family errands, less reliance on parents or other family members for transportation, and less use of bicycles and mopeds. However, other findings seem to suggest that 16 year old licensure, and associated increased mobility, reduces the likelihood of teenagers going to parties or holding a paying job on weekdays or on weekends. These latter findings are surprising, given that licensure should increase the access of teenagers to these activities.

To clarify the implications of the latter findings, the lifestyle and mobility characteristics of licensed and unlicensed 16 year olds in New York and Michigan were compared. As expected, licensed 16 year olds were more likely to do family errands and less likely to depend on other modes of transportation (except for mopeds) compared to unlicensed 16 year olds (Table 2). They were also more likely to hold paying jobs and to go to parties. Thus, the negative relationship of lower licensure age with jobs and going to parties occurred despite greater participation in these activities by licensed 16 year olds.

This apparent inconsistency suggests the operation of other factors than minimum licensure age. One such factor is the unemployment rate, which in May 1983 was highest in Michigan (14.7 per cent) and lowest in New Jersey (7.5 per cent); New York's unemployment rate was in between (8.5 per cent).[9] At age 15, child labor laws restrict employment opportunities in all states and most jobs held are neighborhood jobs such as delivering papers or mowing lawns, which are likely to have similar availability from state to state. At age 16, however, teenagers become eligible for many adult occupations; the unemployment rates indicate that opportunities for these occupations are greater in New Jersey.

Another possible explanation for these inconsistent effects is that increased licensure may affect the mix of activities available to teenagers. For example, although licensed 16 year olds are better able than unlicensed 16 year

†Moped licenses can be obtained at age 15 in New Jersey and Michigan, and at age 16 in New York.

TABLE 2—Responses of Licensed and Unlicensed 16 Year Olds in Michigan and New York to Significant Lifestyle and Mobility Questions

	Michigan		New York	
Per Cent who:	Licensed	Unlicensed	Licensed	Unlicensed
	%	%	%	%
Did family errands twice or more per week	46	15	44	13
Rode with parents twice or more per week	53	67	44	73
Rode with other family member twice or more per week	17	30	16	29
Rode a bicycle twice or more per week	15	27	20	30
Drove a moped 20 or more times in last year	8	9	9	4
Went to parties twice or more per week	15	14	21	16
Worked at least three hours per weekday at paying job	25	19	39	21
Worked at least three hours per weekend day at paying job	31	21	53	31

olds to get to parties and go to slightly more of them, they may also opt for individual or small group activities that become possible with access to motor vehicles. This would cause party-going to decrease in this age group as licensure rates increase.

Licensure rate differences in the three states studied did not affect 22 of the 26 lifestyle variables surveyed. There was no indication that lack of licensure hampers job holding; nor does it hamper participation in other social activities outside the home for which transportation is required. There was also no evidence that 16 year olds spend more time on home-based activities, such as reading or homework, when their licensure is restricted. The mobility data indicated that 16 year olds in New Jersey and New York compensate for lack of licensure by relying more on their parents and other family members for transportation, by riding bikes, and, in New Jersey, by riding mopeds.

The major lifestyle difference resulting from differences in 16 year old licensure rates is that licensing increases the extent to which 16 year olds do family errands such as shopping or providing transportation for their siblings. This eases the burden on parents and is likely a reason for parents to support early licensure. On the other hand, raising licensure age beyond 16 has been shown to be an effective means of reducing highway deaths and injuries.[2,3,7]

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